# *Nunavut Bureau of Statistics*

# Guide to the Labour Force Survey in Nunavut

## – 2009 –

*(released on May 8, 2009)*

This reference document was created to help data users understand the Labour Force Survey (LFS) data collected by Statistics Canada in Nunavut so they can appropriately interpret labour market movements. A glossary of the main concepts used in the LFS is provided at the end of the document.

## *Increase in survey coverage in Nunavut*

On May 8, 2009, Statistics Canada released Nunavut data collected through the Labour Force Survey based on a recent increase in survey coverage in Nunavut. The Nunavut LFS data is now covering 19 communities, representing about 92% of all Nunavut residents aged 15 years and over. The increase in survey coverage was fully implemented in March 2008 and therefore, the expanded Nunavut LFS data series starts in March 2008 and new data will be released every month thereafter.

Prior to the May 8, 2009 release date, the LFS data for Nunavut was only covering ten of the largest communities in the territory, representing about 70% of all Nunavut residents aged 15 years and over. The increase in survey coverage for Nunavut, effective in the spring of 2009 and retroactive to the winter of 2008, brings it on par with the other two territories (98% in the Northwest Territories and 92% in both Yukon and Nunavut).

The following communities will now be included in the LFS sample for Nunavut. Iqaluit, Rankin Inlet, Cambridge Bay, Kugluktuk will always be in the sample. In addition one community from each of the following groups (strata) will also be selected: Baker Lake or Arviat; Igloolik or Pond Inlet; Cape Dorset or Pangnirtung; Taloyoak, Gjoa Haven or Kugaaruk; Coral Harbour or Repulse Bay; Qikiqtarjuaq, Arctic Bay, Hall Beach or Clyde River.

The LFS has been conducted as a pilot survey since late 2000 in Nunavut. Given the special difficulties in collecting data in northern areas along with associated data quality issues at the beginning of the pilot project, data are only available for Nunavut from 2004 forward. These estimates are based on a 3-month moving average and are not included in national totals. From January 2004 to December 2007, estimates represent about 70% of all Nunavut residents aged 15 and over. Starting in January 2008, coverage was extended to 92%, so that by March 2008, the 3-month moving average is based on the extended coverage. **Because of the large differences in coverage, users are advised to not compare estimates prior to March 2008 with data from that date forward.** The January and February 2008 3-month moving average estimates are based on a mix of both coverages, because the extended coverage was introduced in January 2008. **Therefore, users are also advised to not use these estimates**. Estimates from January 2004 to December 2007 are based on the 10 largest communities in Nunavut: Iqaluit, Rankin Inlet, Cambridge Bay, Kugluktuk, Baker Lake, Arviat, Pond Inlet, Cape Dorset, Pangnirtung and Igloolik. Estimates from March 2008 to the present cover those communities as well as: Taloyoak, Gjoa Haven, Kugaaruk, Coral Harbour, Repulse Bay, Qikiqtarjuaq, Arctic Bay, Hall Beach and Clyde River.

## *Comparing the two Nunavut LFS designs with the 2006 Census data*

With the increase in coverage in Nunavut (from 10 to 19 communities), the LFS sample is more representative of the working-age population of the territory. Using 2006 Census data, the following table compares the main labour force indicators for Nunavut as a whole, for the 19 communities currently included in the survey and for the 10 largest communities for the former design used for estimates prior to January 2008. As the table below shows, the estimates based on the 19 communities are very close to the estimates for Nunavut as a whole, especially for the rates. Adding the excluded communities to the survey coverage would likely not significantly change the overall results obtained by the LFS.

**Table 1: Comparison of main labour force indicators for selected geographic groupings, 2006 Census data**

| | **Nunavut** | **19 communities** (current LFS design) | **10 largest communities** (former LFS design) |
|---|---|---|---|
| Population 15 years and over | 19,340 | 17,925 | 13,770 |
| Labour force | 12,635 | 11,715 | 9,220 |
| Employment | 10,670 | 9,905 | 8,045 |
| Unemployment | 1,965 | 1,835 | 1,190 |
| Not in labour force | 6,705 | 6,210 | 4,550 |
| | | | |
| Participation rate (%) | 65.3 | 65.4 | 67.0 |
| Employment rate (%) | 55.2 | 55.3 | 58.4 |
| Unemployment rate (%) | 15.6 | 15.7 | 12.9 |
| Inuit proportion among the population 15+ (%) | 79.2 | 78.4 | 74.1 |

*Source: Statistics Canada, 2006 Census of Population, Catalogue # 94-581-XCB2006001*

When comparing the 2006 Census data for the entire territory with the combined 19 communities we get similar results for the participation rate, 65.3% for Nunavut versus 65.4% for the 19 communities, the employment rate, 55.2% for Nunavut versus 55.3% for the 19 communities, and the unemployment rate, 15.6% for Nunavut versus 15.7% for the 19 communities. The proportion of Inuit in the population aged 15 and over is also similar for both Nunavut and the 19 communities.

The 2006 Census labour force data for the 10 largest Nunavut communities seem to give a slightly more positive picture of the territory's labour market than if we were to look at the data for all the communities. When comparing the data between the territory as a whole and the 10 largest communities, one can observe that the participation and the employment rates for the 10 largest communities are slightly higher than the ones for the whole territory. As for the unemployment rate, it was somewhat lower for the 10 largest Nunavut communities than for the whole territory. Although the LFS data based on Nunavut's 10 largest communities were valuable for monitoring labour market trends in Nunavut in the past, the LFS estimates that are now produced by covering the 19 communities provide a closer picture of the territorial labour force situation.

## *LFS estimates for Nunavut and the other two territories*

Data users will find LFS estimates for Nunavut on the Nunavut Bureau of Statistics' website at the following link: http://www.gov.nu.ca/eia/stats/labour.html. If you have a question or require data, please click on Questions? located on the left panel and send an email outlining your request.

LFS estimates for the three territories are also available on Statistics Canada's website. The monthly publication Labour Force Information, catalogue #71-001-X, (http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=71-001-X&lang=eng) and the monthly Summary table showing Labour force characteristics by territory (http://www40.statcan.ca/l01/cst01/lfss06-eng.htm) provide free LFS estimates for each territory. On May 8, 2009, the Labour Force Survey released a new table containing 3 month moving average estimates on labour force characteristics for all three territories. As a result the 3 month moving average data for the territories have been removed from the CANSIM Table 282-0054 and have been replaced by Table 282-0100. The annual estimates for the territories are still located on the annual CANSIM Table 282-0055. The annual 2008 estimates for Nunavut are for the 19 communities and the annual estimates from 2004 to 2007 are for Nunavut's 10 largest communities. CANSIM data are available for a fee.

## *Labour Force Survey Overview*

- The Labour Force Survey is a household survey carried out monthly (since 1952) by Statistics Canada.
- The LFS is the source of the official measure of unemployment in Canada and provides information on major labour market trends.
- The objective of the LFS is to divide the working-age population into three mutually exclusive classifications – employed, unemployed, and not in the labour force – and to provide descriptive and explanatory data on each of these categories.
- The LFS is a major source of information on the personal characteristics of the working-age population, including age, sex, educational attainment and Aboriginal identity[1].

## *Labour Force Survey in the territories*

- The LFS has been conducted as a pilot survey since 1991 in the Yukon and since late 2000 in the Northwest Territories and Nunavut. Given the special difficulties in collecting data in northern areas, and associated data quality issues at the beginning of the pilot projects, data is available since 1992 for the Yukon, 2001 for the Northwest Territories and 2004 for Nunavut.
- Since the sample design and the rotation pattern are different from those in the 10 provinces, estimates for the territories are not included in the national estimates, but are published separately. National LFS estimates are derived using the results of the LFS in the provinces.
- Despite the methodological differences, the LFS data for the territories are comparable to the LFS estimates produced for the 10 provinces (when the data series are presented in a similar format, such as a 3 month moving average unadjusted for seasonality). The same LFS questions are asked in the territories as in the provinces, with a few exceptions. The rent questions are not asked in the territories nor are there any supplements to LFS in the North.

[1] Starting in 2004, the questions on Aboriginal identity were asked in the territories, Manitoba, Saskatchewan, Alberta (in late 2003 for that province) and British Columbia. As of January 2007, the questions on Aboriginal identity has been extended to all provinces.

## ***Survey methodology in Nunavut***

- As of March 2008, the estimates from the LFS in Nunavut are representative of the civilian, non-institutionalised population 15 years of age and over whose usual place of residence is one of the 19 communities in Nunavut covered by the LFS (which are referred to as the "target population"). Therefore, the following groups of peoples are excluded from the survey: 1) Nunavut residents living outside the 19 communities included in the survey, 2) people who work in Nunavut but whose usual place of residence is outside the territory, 3) people living in institutions (*e.g.*, penal institutions, hospitals, nursing homes) for six months or longer, and 4) full-time members of the Canadian Armed Forces.
- Prior to the January 2008 estimates, the LFS sample in Nunavut was designed to represent the 10 largest communities in the territory, covering about 70% of all Nunavut residents 15 years of age and over. Therefore, the data from January 2004 to December 2007 are not representative of the working-age population for the whole territory. For more information on the methodology used when the LFS was conducted in Nunavut's 10 largest communities only, please consult the *Guide to the Labour Force Survey in Nunavut's 10 largest communities, 2007* on the Nunavut Bureau of Statistics' website (http://www.gov.nu.ca/eia/stats/Labour/LFS/Guide%20to%20the%20Labour%20Force%20Survey%20in%20Nunavut's%2010%20largest%20communities,%202007.pdf).
- The LFS in Nunavut follows a quarterly sampling design. Each three consecutive months have three independent and mutually exclusive monthly samples. The data from any three consecutive months need to be combined to get a representative sample of the target population.
- The data are collected from a sample of approximately 730 households per three-month consecutive period, involving about 1,800 persons 15 years of age and over. Data collection is carried out each month during the week following the LFS reference week (normally the week containing the 15$^{th}$ day of the month).
- The LFS uses a stratified area frame to draw its sample in order to maximize the reliability of the estimates while keeping collection costs at a minimum. The 19 communities in Nunavut covered by the survey have been partitioned in ten strata. Among the four strata containing only one community, the dwellings are selected directly. However, for the other six strata, a community needs to be randomly selected first and then a sample of dwellings within that community is chosen. In total, ten communities are selected for the sample. Communities with similar characteristics were grouped together within a stratum.
- The sample is spread amongst eight rotating panels. A household remains in the sample for two years for a total of eight interviews. If a household was first selected for the month of January 2008, it will be interviewed again every three months (*e.g.*, April, July, October 2008, January, April, July and October 2009). After the eighth interview, the household is replaced by another household from the same community or from another community in the same stratum. Each quarter, one eighth of the sampled households are experiencing their first interview.
- Survey operations are conducted by Statistics Canada staff. First contact is usually done in person (interviewers are flown in from the South) and most interviews are done over the phone where possible. Proxy responses are often used. That is, a member of the household may answer the questions for the other members of the same household. The Nunavut Bureau of Statistics will work with Statistics Canada to determine the feasibility of hiring local interviewers.
- Once the data are collected and edited, the sample data are weighted to represent the target population. Weights are calculated based on the sample design and are then adjusted for non-response and coverage errors (for eight age-sex groups and for the proportion of Inuit).

## *Data quality*

- Information on survey operations indicates a high response rate for the monthly labour force survey in Nunavut as well as for the rest of the country. The average response rate for the 19 communities in Nunavut covered by the survey was 93.1% per month in 2008. For that same year, the average response rate per month for the 10 provinces combined was 91.3%.
- The vacancy and the slippage rates tend to be higher in the territories than for the rest of the country. In Nunavut, the average vacancy rate was 15.8% in 2008. On average, the slippage rate[2] in the territory was 16.9% in 2008. For the 10 provinces combined together in 2008, the vacancy rate was 11.3% and the slippage rate was 10.6%.
- Sampling errors calculated for the survey should be considered when statistics from the monthly labour force are being used. The preliminary standard errors and coefficients of variation for the labour force estimates (annual and 3 month moving average) are as follows:

**Table 2: Standard errors and coefficients of variation (CVs) for labour force characteristics, annual average and 3 month moving average (3MMA) estimates, Nunavut – 19 communities, 2008**

| | 2008 annual average | | | 3 month moving average | | |
|---|---|---|---|---|---|---|
| | **Estimates** | **Standard errors** (preliminary) | **CVs (%)** (preliminary) | **Estimates** (average of all 3MMAs from March 2008 to December 2008) | **Standard errors** (preliminary) | **CVs (%)** (preliminary) |
| Population 15 years and over | 18,600 | 0 | 0.0 | 18,600 | 0 | 0.0 |
| Labour force | 11,500 | 237 | 2.0 | 11,500 | 296 | 2.6 |
| Employment | 10,100 | 184 | 1.8 | 10,100 | 228 | 2.2 |
| Unemployment | 1,400 | 153 | 10.8 | 1,500 | 208 | 14.7 |
| Not in labour force | 7,100 | 237 | 3.4 | 7,000 | 296 | 4.3 |
| Participation rate (%) | 61.9 | 1.3 | 2.0 | 62.1 | 1.6 | 2.6 |
| Employment rate (%) | 54.2 | 1.0 | 1.8 | 54.3 | 1.2 | 2.2 |
| Unemployment rate (%) | 12.5 | 1.2 | 9.6 | 12.6 | 1.6 | 13.3 |

*Source: Statistics Canada, Household Survey Methods Division, Labour Force Survey*

Statistics Canada considers any survey estimate with a coefficient of variation (CV) less than or equal 16.5% as reliable, and publishable without cautionary notes. However, a CV over 33.3% is considered too unreliable to be released. If a CV is between 16.5% and 33.3%, the data are potentially useful for some purposes but should be accompanied by a warning to users regarding their accuracy.

- Another source of error in surveys is referred to as non-sampling error. These errors result from incorrect answers being given to questions, data entry errors, *etc*. Surveys are designed to help minimize such errors. Generally, the effect of such errors is unknown.

[2] The annual average slippage rate was calculated by averaging the monthly slippage rates for the 12 months of the year. The annual response and vacancy rates were calculated by averaging both numerators and denominators before calculating the rate.

## *Survey results*

- Results for the territories are reported based on 3 month moving averages (3MMA) to respect the sampling design and to obtain reasonable sampling errors. This means that data reported for April, actually represent survey collection in February, March and April. This technique is also used to report sub-provincial LFS results in southern Canada in order to smooth out extreme variations in the data and allow simpler trend analysis.
- All counts from the monthly labour force survey are rounded to the nearest 100, but the Nunavut's rates are based on the unrounded data. Due to the rounding some components may not sum to the total.
- Rounded estimates of less than 200 are suppressed for confidentiality and reliability reasons. Therefore, any estimates with a value of 149 or less are indicated as "X".
- Since the data are not seasonally adjusted (at least five years of data are needed to calculate a seasonal pattern in a series), the month-to-month changes should be used with some caution since some of the changes may be due to seasonal variations (*e.g.*, employment tends to increase in the summer months). It is recommended to compare a 3MMA estimate with the same three-month period in the preceding year. For example, comparing the 3MMA ending in April 2009 with the 3MMA ending in April 2008.

## *Employment in LFS*

- The concepts of employment and unemployment are derived from the theory of the supply of labour as a factor of production (defined as those goods and services included in the System of National Accounts).
- The concept of "work" includes any work for pay or profit, that is, paid work in the context of an employer-employee relationship, or self-employment. Work for in-kind trading activity is included.
- Unpaid housework, volunteer work, traditional activities for own consumption are not counted as work by the survey, although these activities need not differ from paid work, either in purpose or in the nature of the tasks completed.
- The concepts and definitions of employment and unemployment adopted by the survey are based on those endorsed by the International Labour Organisation.

## Additional information on the survey data and concepts

For more definitions on other concepts used in the Labour Force Survey and for a copy of the questionnaire, please refer to the *Guide of the Labour Force Survey, 2009* available for free on Statistics Canada's website: http://www.statcan.gc.ca/bsolc/english/bsolc?catno=71-543-G&CHROPG=1.

For information about the Nunavut data in the Labour Force Survey or to request data, please contact the Bureau's information officers (mmearns@gov.nu.ca or dkilabuk@gov.nu.ca). You can also contact the Client Services at Statistics Canada's Labour Statistics Division at 1-866-873-8788 or at *labour@statcan.gc.ca*.

# Glossary

**Aboriginal identity**

Persons who reported identifying with at least one Aboriginal group, for example, North American Indian, Métis or Inuit. This is based on the individual's own perception of his/her Aboriginal identity, similar to the concept used with the Census. "Aboriginal identity" is not to be confused with "Aboriginal ancestry", another concept measured by the Census, but not with the LFS.

**Coefficient of variation**

The estimated coefficient of variation for an estimate is simply the ratio of the estimated standard error for that estimate to the estimate itself. This ratio is expressed as a percentage. Estimates having a low coefficient of variation are considered to be stable and reliable because their standard error, which is a measure of how widely estimates can change from sample to sample, are so small in comparison with the estimate itself. Estimates having a high coefficient of variation are considered to be unreliable. Statistics Canada will typically not publish an estimate for which the coefficient of variation is over 33%.

**Discouraged job searcher**

Discouraged job searchers are defined as those persons who reported wanting to work at a job or business during the reference week and were available but who did not look for work because they believed no suitable work was available.

**Dwelling**

Any set of living quarters that is structurally separate and has a private entrance outside the building or from a common hall or stairway inside the building.

**Educational attainment**

Highest level of schooling completed.

**Employee**

A person who works for others. Employees can be subdivided into public sector employees and private sector employees.

**Employment**

Employed persons are those who, during the reference week:

(a) did any work at all at a job or business, that is, paid work in the context of an employer-employee relationship, or self-employment; or

(b) had a job but were not at work due to factors such as own illness or disability, personal or family responsibilities, vacation, labour dispute or other reasons (excluding persons on layoff, between casual jobs, and those with a job to start at a future date).

**Employment rate**

Number of employed persons expressed as a percentage of the population 15 years of age and over. The employment rate for a particular group (for example, Inuit aged 25 years and over) is the number employed in that group expressed as a percentage of the population for that group.

**Full-time employment**

Persons who usually work 30 hours or more per week at their main or only job.

**Goods-producing sector** (or goods-producing industries)

Includes agriculture; forestry, fishing, mining, and oil and gas extraction; utilities (electric power, gas and water); construction; and manufacturing.

**Household**

Any person or group of persons living in a dwelling. A household may consist of any combination of: one person living alone, one or more families, a group of people who are not related but who share the same dwelling.

**Industry**

The general nature of the business carried out in the establishment where the person worked (main job only), based on the 2002 North American Industry Classification System (NAICS 2002). If a person did not have a job during the survey reference week, the information is collected for the last job held, providing the person worked within the previous 12 months.

**Inuit identity**

Persons who reported identifying themselves as Inuit. This is based on the individual's own perception of his/her Inuit identity.

**Labour force**

Civilian non-institutional population 15 years of age and over who, during the survey reference week, were employed or unemployed.

**Non-response rate**

The non-response rate is calculated at the household level. All vacant dwellings (see vacancy rate) are excluded from the calculation. A household is considered to be a non-response if: 1) the occupants refuse to respond, 2) the household is temporarily absent, 3) no one is home at any of the contact attempts, or 4) for some other reason (*e.g.*, language barrier), no response is recorded. The non-response rate is then the percentage of households in the sample which are non-respondents.

**Not in the labour force**

Persons not in the labour force are those who, during the reference week, were unwilling or unable to offer or supply labour services under conditions existing in their labour markets, that is, they were neither employed nor unemployed.

**Participation rate**

Total labour force expressed as a percentage of the population aged 15 years and over. The participation rate for a particular group (for example, Inuit aged 25 years and over) is the labour force in that group expressed as a percentage of the population for that group.

**Part-time employment**

Persons who usually work less than 30 hours per week at their main or only job.

**Private sector employee**

Those who work as employees of a private firm or business.

**Public/private sector employment**

(a) The public sector includes employees in public administration at the federal, provincial and municipal levels, as well as in Crown corporations, liquor control boards and other government institutions such as schools (including universities), hospitals and public libraries.

(b) The private sector comprises all other employees and self-employed owners of businesses (including unpaid family workers in those businesses), and self-employed persons without businesses.

**Public sector employee**

Those who work for a local, provincial or federal government, for a government service or agency, a crown corporation, or a government funded public establishment such as a school (including universities) or a hospital.

**Reference week**

The entire calendar week (from Sunday to Saturday) covered by the Labour Force Survey each month. It is usually the week containing the 15$^{th}$ day of the month. The interviews are conducted during the following week, called the Survey Week, and the labour force status determined is that of the reference week.

**Response rate**

The response rate is simply the complement of the non-response rate:

(response rate) = 100% - (non-response rate)

**Self-employment**

Includes working owners of an incorporated business, farm or professional practice, or working owners of an unincorporated business, farm or professional practice. The latter group also includes self-employed workers who do not own a business (such as babysitters and newspaper carriers). Self-employed workers are further subdivided by those with or without paid help. Also included among the self-employed are unpaid family workers. They are persons who work without pay on a farm or in a business or professional practice owned and operated by another family member living in the same dwelling.

**Service-producing sector** (or service-producing industries)

Includes trade; transportation and warehousing; finance, insurance, real estate and leasing; professional, scientific and technical services; business, building and other support services; educational services; health care and social assistance; information, culture and recreation; accommodation and food services; other services; and public administration.

**Slippage rate**

The slippage rate is the percentage difference between: 1) the most recent population estimates from the Census of Population; and 2) the population estimate made from LFS data, without external information. Note that the LFS accounts for coverage error by a process known as calibration, where LFS estimates of totals for age-sex groups are reconciled to the corresponding estimates from the Census of Population. For LFS, net undercoverage, which gives a positive slippage rate, is more common than overcoverage.

**Standard error**

Different samples can produce different estimates. The standard error is a measure of how widely these estimates can vary from sample to sample. The theoretical standard error is obtained either from: 1) computing the estimates that would result from all possible samples taken from the population or 2) using known statistical properties from the distribution of the estimates of all possible samples. Since neither of the above is usually possible in practice, an estimated standard error is calculated from the sample survey data.

Furthermore, the estimated standard error is combined with assumptions about the underlying distribution of the estimates over all possible samples (the assumptions usually being justified with a powerful set of theorems known as Central Limit Theorems in theoretical statistics) to make confidence statements about how far away the true population value might be from the estimate, *e.g.*, the estimate may be said to be accurate within 2 standard errors with 95% confidence.

**Unemployment**

Unemployed persons are those who, during the reference week:

(a) were on temporary layoff during the reference week with an expectation of recall and were available for work, or

(b) were without work, had actively looked for work in the past four weeks, and were available for work, or

(c) had a new job to start within four weeks from reference week, and were available for work.

**Unemployment rate (alternative definition – including discouraged job searchers)**

Number of unemployed persons and discouraged job searchers expressed as a percentage of the labour force including the discouraged job searchers.

**Unemployment rate (official definition)**

Number of unemployed persons expressed as a percentage of the labour force. The unemployment rate for a particular group (for example, Inuit aged 25 years and over) is the number unemployed in that group expressed as a percentage of the labour force for that group.

**Vacancy rate**

The vacancy rate is the ratio (expressed as a percentage) of the number of vacant dwellings over the total number of dwellings in the LFS sample. A dwelling is considered vacant when it is: 1) unoccupied, 2) seasonally vacant, 3) under construction, 4) occupied by individuals who are not eligible for the LFS, or 5) a nonexistent dwelling (dwelling which has been demolished, converted into business premise, moved, abandoned, or listed in error). Please note that the term "Vacancy Rate" takes on a more general definition in the LFS context and as such should not be interpreted as an indicator of the housing market.